APOD Soil Testing Pty Ltd
Domestic & Commercial Site Investigations
ABN: 47 106 610 977 ACN: 106 610 977

53 Drapers Road
Eatons Hill Qld 4037
(07) 3264 6995
apodsoil@bigpond.com

24th January 2023

Elite Soil Testing Pty Ltd
P O Box 644
KALLANGUR QLD 4503

Job No. **22-10-42366**
Report No. **R-14043**

Site Address

Lot 34 Park Avenue

WOODFORD QLD 4514

Commission

Geotechnical Investigation

1.0 INTRODUCTION

APOD Soil Testing Pty Ltd was commissioned to undertake a geotechnical investigation for **Elite Soil Testing Pty Ltd**, (28/10/2022 by email), at the site of the proposed development located at **Lot 34 Park Avenue, Woodford**. Investigation was carried out on the 16/01/2023.

The aim of the investigation was to determine the following:

- The strength capacity of the subsurface profile;
- The nature and characteristics of the subsurface profile;
- Site classification in accordance with AS 2870-2011.

It is understood that a new dwelling is to be constructed.

2.0 SITE OBSERVATIONS

VEGETATION: Cleared site.

SLOPE: Slight. 2% slope (clinometer measurement). As this slope was not formally surveyed, the percentage and direction should be treated as approximate.

ON SITE DRAINAGE: Poor to fair. Site generally drained from East to West.

WATER TABLE: No water table was encountered in the test holes drilled to the target depth of our commission.

3.0 INVESTIGATIONS

Two test holes were drilled within the area of the proposed footings using a 4WD mounted 100mm diameter power auger. Numerous disturbed samples were collected and hand classified. One tube sample was returned to the laboratory and tested for its shrink/swell (lss) parameters. A pocket penetrometer (PP) was used to determine the strength of the cohesive soils.

4.0 SITE CONDITIONS

The existing soil encountered generally consists of a **silty sand(SM) and clayey sand(SC) fill** material underlain by a **natural silty clay(CI). Fill was encountered across the proposed site at the following depths:**

Bore Hole #1	Bore Hole #2
0-400mm	0-200mm

At the time of writing this report, documentation complying with AS 3798 had been sighted, therefore the fill is described as **controlled fill** (Elite Soil Testing Pty Ltd – Project No. J22069).

Minimum allowable bearing capacity:

Bore Hole #1	Bore Hole #2
100kPa @ 500mm	100kPa @ 500mm

For detailed soil descriptions and bore hole locations refer to the log section located in the appendix of this report.

5.0 RESULTS

Bore hole #1 @ 0.5m – 0.8m:- l.s.s. = 1.2% Ys = 20mm
Ys calculation for zone of influence of trees:- Yst = 30mm
Yst calculation is a guide only. Design engineer to refer to appendix H & CH of AS2870-2011. The predicted surface movement calculation in this report has been assessed using clause 2.3 of AS 2870 – 2011. Refer to the appendix of this report for full laboratory results.

6.0 CONCLUSIONS

The shrink/swell index of 1.2% indicates that the silty clay(CI) material is moderately reactive. The calculation of predicted total surface movement of **Ys 20mm (Class "M" reactivity)** is subject to seasonal moisture variation due to climatic changes, but not abnormal moisture build up due to leaking pipes, excess watering, poor drainage, large trees or other similar scenarios.

Based on site conditions encountered, soil tests carried out and observations on site, the site is classified **Class "P"** in accordance with Australian Standard 2870-2011 "Residential Slabs and Footings". **Class "P" due to abnormal moisture conditions. As per AS 2870-2011 Clause 2.1.3 (e).**

The design engineer must ensure all footings, internal beams and load bearing supports are founded into competent natural ground through any fill.

The design engineer must be aware the above quoted Ys does not take into account ground movements generated by "abnormal" conditions. The design engineer must use calculation provided in appendix H & CH of AS 2870-2011 to ensure that the design provides acceptable performance.

7.0 CONDITIONS OF CLASSIFICATION

The site classification is subject to the following conditions:

a) Site drainage is adequately provided to direct water away from footings and walls.

b) Trees are to be located well away from the house in order for aggressive root systems to not aggravate the soil moisture conditions.

c) This classification does not support the scenario of plumbing leaks. Any identified anomalies are to be rectified immediately to prevent further damage to the superstructure.

Attached is a copy of the paper *CSIRO "Foundation Maintenance and Footing Performance: A Homeowner's Guide"* for further information.

8.0 SITE RECOMMENDATIONS

The ground immediately surrounding the residence is to be graded away from the residence with a fall of 1:20 for the first 1.0 metre to ensure adequate draining away from the residence. A spoon drain is recommended to be installed to drain the water away from the residence.

9.0 REPORT LIMITATIONS

This report does not take into consideration the long-term or short-term effects of any previous, current or potential subsurface work by mining companies or any other body, or potential slope instability problems. At the time of writing this report neither our clients nor the local authority (or any other agent) has made us aware of any problems affecting this allotment.

This investigation is limited in scope and extent, and it is possible that areas may exist which differ from those shown on the test hole records used for this classification. Should any variation from those shown be encountered during excavation work or subsequent earthworks carried out, reappraisal of the classification will be required. Should you require any further information or clarification regarding this report, please contact the undersigned.

APOD Soil Testing Pty Ltd
QBCC Act Licence No: 1064604

Patrice Le Pla
Managing Director
QBCC Act Licence No: 731863
Adv.Dip.Lab.Op

APPENDIX

APOD Soil Testing Pty Ltd
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Log Sections

TEST SITE 1 TEST SITE 2

Address: Lot 34 Park Avenue, Woodford Job No: 22-10-42366 Date: 16/01/2023 Technician: Patrice Le Pla

Location: Refer to site sketch Location: Refer to site sketch

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	SILTY SAND(SM) (or-br)				100	CLAYEY SAND(SC) (or-br)			
200	- fine to medium grained				200	moist & controlled			
300	- with clay layers				300	SILTY SAND(SM) (gy-br)			
400	moist & controlled				400	moist & medium dense			
500	SILTY CLAY(CI) (or-br.mott.rd&gy)			290	500	SILTY CLAY(CI) (or-br.mott.gy&rd)			350
600	- with trace sand & gravels				600	- with trace sand & gravels			
700	moist & stiff/very stiff				700				
800					800	moist & very stiff			
900	(lt.gy.mott.or&rd)				900				
1000				450	1000				400
1100					1100	(lt.gy.mott.or&rd)			
1200					1200				
1300					1300				
1400					1400				
1500	moist & very stiff			450	1500				330
1600					1600	moist & very stiff			
1700					1700				
1800					1800				
1900					1900				
2000				450	2000				400
2100	END – with power auger				2100	END – with power auger			
2200					2200				
2300					2300				
2400					2400				
2500					2500				
2600					2600				
2700					2700				
2800					2800				
2900					2900				
3000					3000				
3100					3100				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-2017 gy=grey or=orange yell=yellow rd=red wh=white br=brown bk=black bl=blue gr=green Refer AS1726-2017 Clause 6.1 for classifying soils.

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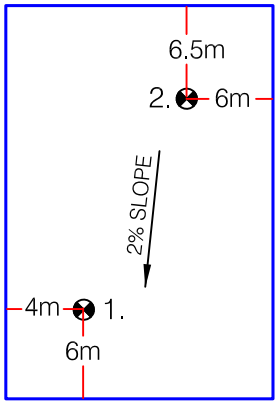
SITE SKETCH

NOT TO SCALE

Address: Lot 34 Park Avenue, Woodford Job No: 22-10-42366 Date: 16/01/2023



⊗ TEST SITES ——► SLOPE DIRECTION

TEST METHODS:
Hand Auger ☐ Small Rig(100mm dia.) ☒

SITING:
Existing ☐ Plans ☐ General Setback ☒
Pegged ☐ Met on site ☐ Cut/Fill Pad ☐

EXCAVATION PROBLEMS:
Access to Site ☐ Shallow Rock ☐
Rubbish in Fill ☐ Wet/Dry Collapse ☐
Gravels/Cobbles/Boulders ☐
Fluctuating Water Table ☐ Services ☐

VEGETATION: Cleared site.

ON SITE DRAINAGE:
Poor ☐ Poor/Fair ☒ Fair ☐
Fair/Good ☐ Good ☐

SLOPE:
Virtually Flat ☐ Slight ☒ Gentle ☐
Moderate ☐ Steep ☐ Very Steep ☐

SHRINK/SWELL TEST RESULTS

Client:	ELITE SOIL TESTING PTY LTD	**Lab. No:**	33209
Project:	LOT 34 PARK AVE, WOODFORD	**Job No:**	22-10-42366
Location:	B.H. 1 @ 0.5m - 0.8m	**Date Sampled:**	16/01/2023
Test Procedure:	AS1289 7.1.1/2.1.1	**Description:**	or-br.mott.rd&gy SILTY CLAY with trace sand & gravels

Swell Test

Moisture Content - Initial %	**24.2**	Applied Load kPa	**25**
Moisture Content - Final %	**24.6**	Water Used:	**Distilled**

Shrink Test

Moisture Content %	**23.5**	Wet Density t/m3	**1.97**
Extent of Cracking of Specimen	**Minor**	Inert Inclusions %	**-10**
Extent of Crumbling of Specimen	**Nil**		

Shrinkage %	**2.0**	**Swell %**	**0.3**	**Shrink/Swell Index %**	**1.2**

Prepared by: **Date:** 24/01/2023

Form 15 Compliance certificate for building design or specification

Queensland Government

This form is to be used by an appointed competent person for the purposes of section 10 of the *Building Act 1975* and sections 73 and 77 of the Building Regulation 2021 (Design-specification certificate) stating that an aspect of building work or specification will, if installed or carried out as stated in this form, comply with the building assessment provisions.

1. Property description

Street address	LOT 34 PARK AVE, WOODFORD 4514

Lot and plan details *(attach list if necessary)*

PART OF LOT 1 ON RP 905601

Local government area the land is situated in

MORETON BAY REGIONAL COUNCIL

2. Description of aspect/s certified

Clearly describe the extent of work covered by this certificate, e.g. all structural aspects of the steel roof beams.

SITE CLASSIFICATION AS PER AS 2870-2011

3. Basis of certification

Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications were relied upon.

AS 2870-2011

4. Reference documentation

AS 2870-2011 – RESIDENTIAL SLABS & FOOTINGS - CONSTRUCTION

5. Building certifier reference number and building development approval number

Building certifier reference number		Building development application number	

6. Appointed competent person details

Under Part 6 of the Building Regulation a person must be assessed as a competent for the type of work (design-specification) by the relevant building certifier.

Name *(in full)*	PATRICE LE PLA		
Company name *(if applicable)*	APOD SOIL TESTING PTY LTD		
Business phone number	07 3264 6995	Mobile	0411 278 525
Email address	apodsoil@bigpond.com		
Postal address	53 DRAPERS RD, EATONS HILL 4037		
Licence or registration number	QBCC LICENCE NO. 1064604		

9. Signature of appointed competent person

This certificate must be signed by the individual assessed and appointed by the building certifier as competent to give design-specification help.

Signature		Date	24/01/2023
LOCAL GOVERNMENT USE ONLY Date received	Click or tap to enter a date.	Reference number/s	